First results from diversity mapping of Passiflora (Passifloraceae) and Vasconcellea (Caricaceae) in the Colombian coffee growing zone

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The Colombian coffee-growing zone is one of the ecoclimatic areas with major impact of human activities in Colombia. It roughly corresponds to the 1000-2000 m altitudinal range along the Cordilleras, where agriculture is based on growing of coffee, plantain, fruits (mainly citrics), and cattle breeding. Large and middle-sized towns have grown steadily in the last decades, imposing new pressures on rural lands (e.g. river basin management for water supply, recreational activities), with negative but also potentially positive effects, such as the new conservation demand and the concomitant development of agro-ecotourism. With the general objective of providing scientific bases for environmental managers at the local and national level, a study of the distribution of biodiversity was undertaken through the study of two genera showing particular diversity at medium to high altitudes: Passiflora (passion fruits) and Vasconcellea (mountain papayas). Geographical records were gathered for 3160 samples from herbaria or the field, for 153 Passiflora and 12 Vasconcellea species. Both genera show an altitudinal variation of their diversity, with a peak at intermediate elevations. The distribution of diversity was analyzed with the DIVA-GIS software. Potential diversity is highest along the Cordillera Central, in the central coffee zone, and between the Cauca and Huila departments. Other hotspots appear in Antioquia, Tolima, Nariño, and the center of Cauca and Cundinamarca departments. With the exceptions of the central coffee zone, these hotspots have been poorly explored by botanists. The overlap between Passiflora and Vasconcellea hotspots underlines the consistency of these first results and constitutes a first validation of our choice of these two important taxa.

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